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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

JAISLE, CECILIA M

ART UNIT

PAPER NUMBER

1624

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/551,920	<b>Applicant(s)</b> SHCHERBAKOVA ET AL.	
	<b>Examiner</b> CECILIA M. JAISLE	<b>Art Unit</b> 1624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 03 October 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-42 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-42 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>02-13-2006</u> .  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED OFFICE ACTION**

### ***Specification***

At page 10, line 2, the intended International Patent Application Serial Number should be inserted and authenticated.

### ***Rejections Under 35 USC 101***

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 15, 17, 18, 32 and 34-42 are rejected under 35 U.S.C. 101 because the disclosed invention is inoperative and lacks utility. In claim 15, the generically recited reactants and starting materials cannot yield the specific compound of claim 15, which is 3-[2-(3-fluoro-phenyl)-ethyl]-2-(2-hydroxy-phenyl)-5-isopropyl-6-methyl-3H-pyrimidin-4-one. Similarly criticisms pertain to claims 17, 32 and 34-42. Claim 18 is inoperative to prepare salts or complexes of the recited 3H-pyrimidin-4-ones.

### ***Rejections Under 35 USC 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-42 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

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Claims 1, 18:

- The term “appropriate” fails to identify the intended starting material.
- The term “carbamide” fails to identify the intended starting material; urea, which would not be not an operable starting material according to this invention (page 4, Scheme I, *inter alia*), is also known as carbamide, especially in the recommended International Nonproprietary Names (rINN).
- The recitation of “cyclizing ... to obtain” fails to define the intended process, especially where there are two (2) cyclizations in the overall procedure.
- The recitation of “substituted” fails to define either the starting material or the final product, especially when the specification (paragraph [0013], *inter alia*) indicates that not any or all substituents are intended.
- Claim 18 recites “The method for preparing a compound ... to yield the compound,” yet includes salts or complexes which cannot be prepared by the procedures therein described.

Claims 2, 19:

- R4 is not defined.
- The term “acetic acid 2-(1-alkyl-2-R4-carbamoyl-alk-1-enylcarbamoyl)-phenyl ester” is not a correct name for the penultimate compound of Scheme I, *inter alia*, according to the International Union of Pure and Applied Chemistry (IUPAC), because no acetic acid ester functional group is in that compound.
- The term “acetic acid 2-(1-alkyl-2-R4-carbamoyl-alk-1-enylcarbamoyl)-phenyl ester” excludes such compounds in which R1 or R2 are cycloalkyl, in which

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R1 and R2 together are  $-(CH_2)_n-$  and n is 3, 4 or 5, in which R3 is other than phenyl, and in which R4 is other than H.

Claims 3, 20:

- The step of “acylation” fails to define the intended reactant.
- The term “3-amino-2-alkyl-alk-2-enoic acid R4-amide” is not a correct name for the antepenultimate compound of Scheme I, *inter alia*, according to IUPAC and excludes such compounds in which R1 or R2 are cycloalkyl, in which R1 and R2 together are  $-(CH_2)_n-$  and n is 3, 4 or 5 and in which R4 is other than H.
- The specification fails to clarify how the compound is numbered.

Claims 4, 21:

- The term “2-alkyl-3-oxo-R4-amide” is not a correct name for the compound illustrated before the last reaction arrow in line 2 of Scheme I, *inter alia*, according to IUPAC and excludes such compounds in which R1 or R2 are cycloalkyl, in which R1 and R2 together are  $-(CH_2)_n-$  and n is 3, 4 or 5 and in which R4 is other than H.
- The specification fails to clarify how the compound is numbered.

Claims 5, 22:

- The term “2-(2-alkyl-[1,3]dioxolan-2-yl)-N-R4-alkanamide” is not a correct name for the compound illustrated before the penultimate reaction arrow in line 2 of Scheme I, *inter alia*, according to IUPAC and excludes such compounds in which R1 or R2 are cycloalkyl, in which R1 and R2 together are  $-(CH_2)_n-$  and n is 3, 4 or 5, and in which R4 is other than H.

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- The specification fails to clarify how the compound is numbered.

Claims 6, 23:

- The term “2-(2-alkyl-[1,3]dioxolan-2-yl)-alkanoic acid” is not a correct name for the compound illustrated after the first reaction arrow in line 2 of Scheme I, *inter alia*, according to IUPAC and excludes such compounds in which R1 or R2 are cycloalkyl, in which R1 and R2 together are  $-(CH_2)_n-$  and n is 3, 4 or 5 and in which R4 is other than H.
- The definition of the reactant as a “primary amine” fails to define the R4 substituent.

Claims 7, 24:

- The term “2-(2-alkyl-[1,3]dioxolan-2-yl)-alkanoic acid” is not a correct name for the compound illustrated after the first reaction arrow in line 1, Scheme I, *inter alia*, according to IUPAC and excludes such compounds in which R1 or R2 are cycloalkyl, and in which R1 and R2 together are  $-(CH_2)_n-$  and n is 3, 4 or 5.
- The recitation of “hydrolysis” fails to define the intended process, especially where there are two (2) hydrolysis steps in the overall procedure.

Claims 8, 25:

- The term “2-alkyl-3-oxo-alkylic acid alkyl ester” is not a correct name for the compound illustrated as the first compound in line 1 of Scheme I, *inter alia*, according to IUPAC and excludes such compounds in which R1 or R2 are cycloalkyl, and in which R1 and R2 together are  $-(CH_2)_n-$  and n is 3, 4 or 5.

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Claims 9, 26:

- The term “appropriate” fails to identify the intended starting material.
- The term “carbamide” fails to identify the intended starting material; urea, which would not be not an operable starting material according to this invention (page 4, Scheme I, *inter alia*), is also known as carbamide, especially in the rINN.
- The term “3-R3-carbamoylamino-2-alkyl-but-3-enoic acid methyl ester” does not specifically identify compounds in which R1 is an alkyl group containing more that one branch (paragraph [0019]).
- R3 is undefined.
- The specification fails to identify this intended compound in the recitation: “...R4 is a substituent other than hydrogen, and R3 is an aryl group which may have substituents in the aryl ring...” (paragraph [0019]).

Claims 10, 27:

- There is no antecedent basis in claims 1 or 9 (for claim 10) or in claims 18 or 26 (for claim 27) for “the Grignard reagent.”
- The term “the Grignard reagent” fails to define the intended reactant.

Claims 11, 28:

- The term “3-amino-2-alkyl-but-3-enoic acid methyl ester” excludes such compounds in which R1 is cycloalkyl and is broader that the supporting disclosure that defines R1 as “lower alkyl” (paragraph [0020], Structure V).

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Claims 12, 29:

- The term “2-alkyl-3-oxo-butyric acid methyl ester” excludes such compounds in which R1 is cycloalkyl and is broader than the supporting disclosure that defines R1 as “lower alkyl” (paragraph [0020]).

Claims 13, 14, 16, 30, 31, 33:

- The term “2-alkyl-3-(2-alkoxy-benzoylamino)-but-3-enoic acid methyl ester” excludes such compounds in which R1 is cycloalkyl and is broader than the supporting disclosure that defines R1 as “lower alkyl” (paragraphs [0020], [0023]).

Claims 18-42:

- The term “complex” is undefined in the specification. A complex, generally referred to as a “coordination compound” or “metal complex,” is a structure consisting of a central atom or molecule weakly connected to surrounding atoms or molecules.
- This specification contains no disclosure of how to form complexes of the 3H-pyrimidin-4-ones and what complexes are intended.

### ***Rejections Under 35 USC 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

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A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-4, 18-21 and 38-40 are rejected under 35 U.S.C. 102(b) over Tice, US 5378678, issued Jan. 3, 1995. Tice describes (col. 5, lines 62-67) cyclization of 3-aroylaminoacrylamide derivative with base to yield 3H-pyrimidin-4-ones. Acylation of the corresponding 3-aminoacrylamide or of a 3-aminoacrylate ester followed by ammonolysis yields the 3-aroylaminoacrylamide derivative. The starting material disclosed in this patent is cyclized with base into the pyrimidinone product. The Tice compounds are used in control of weeds.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to CECILIA M. JAISLE, J.D. whose telephone number is (571)272-9931. The examiner can normally be reached on Monday through Friday; 8:30 am through 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James O. Wilson can be reached on 571-272-0661. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

**/James O. Wilson/  
Supervisory Patent Examiner  
Art Unit 1624**

CECILIA M. JAISLE, J.D.  
2/11/2008